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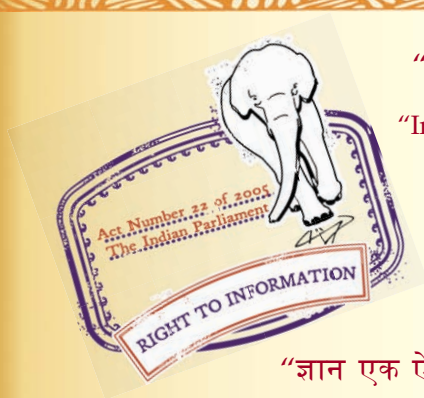
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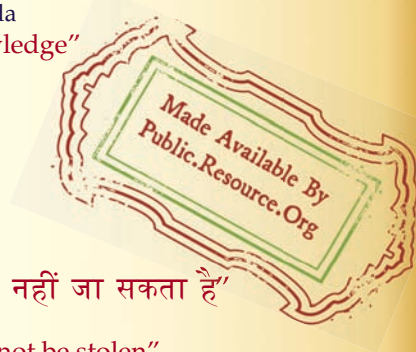
IS 11905 (1986): Shaft Assembly for Rotavator for Power Tiller [FAD 21: Farm Implements and Machinery]



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“Knowledge is such a treasure which cannot be stolen”

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IS : 11905 - 1986

Indian Standard

**SPECIFICATION FOR SHAFT ASSEMBLY FOR
ROTAVATOR FOR POWER TILLER**

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR SHAFT ASSEMBLY FOR ROTAVATOR FOR POWER TILLER

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AMENDMENT NO. 1 SEPTEMBER 1988
TO
IS : 11905-1986 SPECIFICATION FOR
SHAFT ASSEMBLY FOR ROTAVATOR
FOR POWER TILLER

(Page 4, clause 3.1) — Substitute the following for the existing matter:

‘3.1 The hardened portion (see A in Fig. 1) shall be minimum of 20 mm at the middle portion of splines and shall have a minimum hardness of 37 HRC.’

(Page 4, Fig. 1) — Substitute the following for the existing figure:

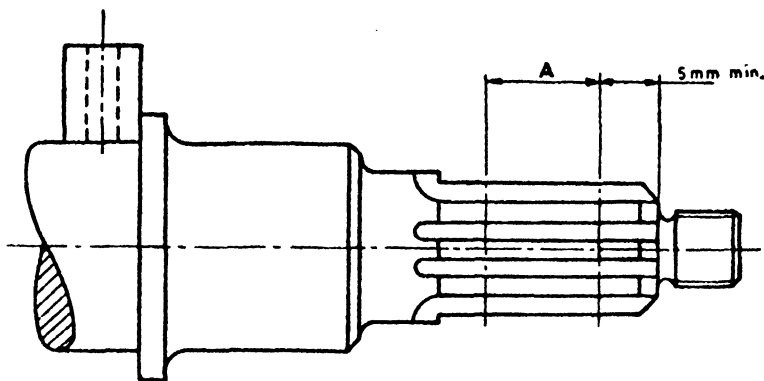


FIG. 1 ROTARY SHAFT

(Page 5, clause 5.4, line 2) — Substitute ‘M 10 fine pitch’ for ‘M 10 × 1.25’.

Indian Standard

SPECIFICATION FOR SHAFT ASSEMBLY FOR ROTAVATOR FOR POWER TILLER

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 28 November 1986, after the draft finalized by the Agricultural Tractors and Power Tillers Sectional Committee had been approved by the Agricultural and Food Products Division Council.

0.2 Rotavator is an important equipment attached with power tiller for wetland and upland cultivation. Shaft assembly is an important assembly on which blades are fitted. To ensure interchangeability in various makes of the rotavator, a need was felt to prepare this standard.

0.3 Power to rotary shaft can be transferred either from one of two ends or from the centre through chain and sprocket. Considering the present mode of transmission in most of the indigenously manufactured power tillers, the essential dimensions have been provided only for the rotary shaft having power transmission at the ends.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies material, dimensions and other requirements of shaft assembly for rotavator attached to the power tiller.

2. MATERIAL

2.1 The material for various components of the assembly shall be as given in Table 1. The material should conform to the relevant Indian Standard and grade given in col 4 and 5 of Table 1.

*Rules for rounding off numerical values (*revised*).

TABLE 1 MATERIAL FOR SHAFT ASSEMBLY

(Clause 2.1)

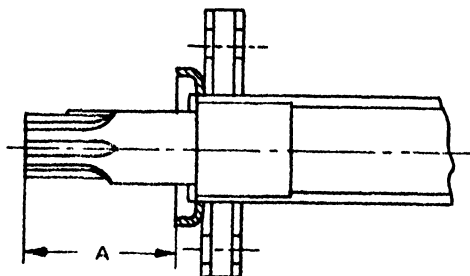
SL No.	COMPONENT	MATERIAL	APPLICABLE IS :	GRADE
(1)	(2)	(3)	(4)	(5)
i)	Blade holder	Steel plate	IS : 226-1975*	ST 42 S
ii)	Rotary shaft	Carbon steel	IS : 7283-1974†	40 C8 or 45 C8
iii)	Rotary pipe	Seamless tube	IS : 3601-1974‡	HFS 17 or 21

*Specification for structural steel (standard quality) (*fifth revision*).

†Specification for hot rolled bars for production of bright bars.

‡Specification for steel tubes for mechanical and general engineering purposes (*first revision*).**3. HARDNESS**

3.1 The hardened portion (*see A* in Fig. 1) shall have minimum hardness of 37 HRC.

**FIG. 1 ROTARY SHAFT****4. DIMENSIONS**

4.1 The outer diameter of the pipe used in the assembly shall be of minimum 44 mm.

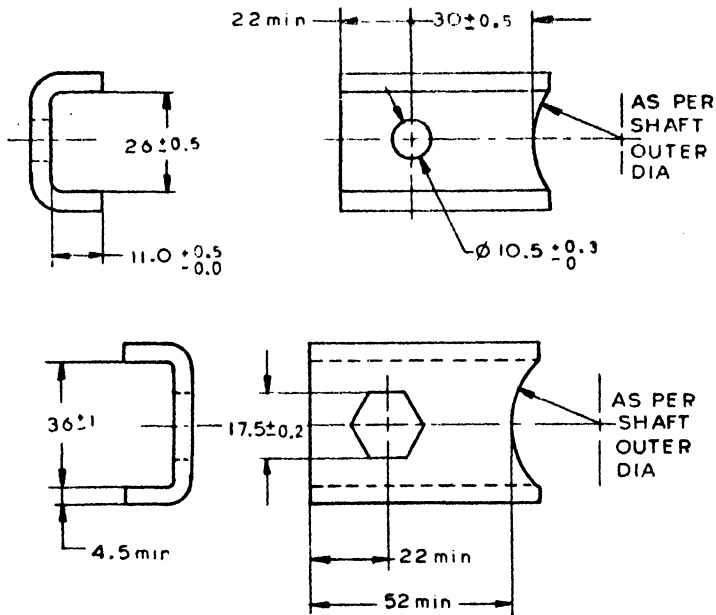
4.2 The dimensions of the blade holder shall be as given in Fig. 2.

4.3 The number of the blade holders and corresponding width of the assembly shall be as given in Table 2.

5. OTHER REQUIREMENTS

5.1 The shaft should not come out of the pipe.

5.2 The blade holders (*see 1 and 2 in Fig. 3*) shall be welded along with the full length.



All dimensions in millimetres.

FIG. 2 DIMENSIONAL DETAILS OF BLADE HOLDER

TABLE 2 NUMBER OF BLADE HOLDERS AND WIDTH

(Clause 4.3)

Sl No.	NUMBER OF THE BLADE HOLDERS	WIDTH, mm ± 5
(1)	(2)	(3)
i)	16	500
ii)	18	540
iii)	20	600

5.3 The blade holder shall be welded with the blade shaft at the specified distance and angular position with respect to the shaft.

5.4 The bolt for fixing blade with the blade holder shall be of size M 10 $\times$ 1.25.

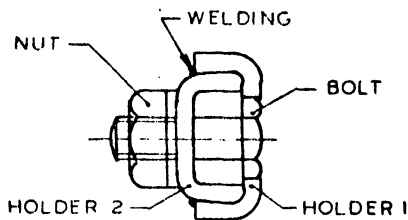


FIG. 3 BLADE HOLDER ASSEMBLY

6. WORKMANSHIP AND FINISH

6.1 The rotary shaft shall be free from cracks, seams and other visual defects which may be detrimental in use.

6.2 The rotary shaft shall be free from rust and shall have a protective coating which will prevent surface deterioration in transit and storage.

7. MARKING AND PACKING

7.1 Marking — Each rotary shaft shall be marked with the following particulars:

- a) Manufacturer's name or recognized trade mark; and
- b) Batch or code number.

7.1.1 Each rotary shaft may also be marked with the Standard Mark.

NOTE — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions, under which a licence for the use of the Standard Mark may be granted to manufacturers or processors, may be obtained from the Bureau of Indian Standards.

7.2 Packing — The rotary shaft shall be packed for safe handling in transit as agreed to between the purchaser and supplier.

8. SAMPLING FOR LOT ACCEPTANCE

8.1 Unless otherwise agreed to between the purchaser and the supplier, the sampling of the rotary shaft for lot acceptance shall be done in accordance with 3 of IS : 7201-1974*.

*Method of sampling of agricultural tractors and machinery.

(Continued from page 2)

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Base Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

<i>Quantity</i>	<i>Unit</i>	<i>Symbol</i>	<i>Definition</i>
Force	newton	N	1 N = 1 kg.m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Electromotive force	volt	V	1 V = 1 W/A
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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